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Applied and academic A-levels: Is there really a need for the applied track in UK further education?

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Abstract

The term ‘applied track’ in UK further education has been used to refer to the applied A-level, the vocational, coursework-based version of the traditional academic A-level. Vocational and coursework-based courses are often criticised for being easier than academic courses, for only attracting students who do not satisfy the requirements to take academic courses and for not developing in students the skills they need to be successful in higher education. This paper considers the extent to which these criticisms may be justified and explores the reasons why students chose to take an applied A-level. The study involved 666 students at a large, mixed sex sixth form college in the UK, who were taking both applied and academic A-levels. Although statistical analysis showed that students on the applied course performed worse than students on two academic courses once their different GCSE scores had been accounted for, it was also found that the applied students were relatively well qualified, that they were generally well motivated and hard working, and that they were extremely satisfied with the course. Finally, it is suggested that perhaps universities are misguided in assuming that applied courses do not develop in students the skills that they need to be successful in higher education.

Keywords: Applied A-level, coursework, vocational education, student choice, progression to higher education

Introduction

The General Certificate of Education Advanced Level, commonly referred to as an A-level, is the main qualification taken by eighteen year-olds in England, Wales and Northern Ireland. Over three quarters of students who achieve three or more A-levels progress onto higher education at a university (Bassett et al. 2009). The Applied A-level, introduced in the UK in 2005, is available as a single or double award, equivalent to one or two GCE A-levels. As a single award A-level, the three most popular subjects are ICT, Business and Health & Social Care. In 2009, 9,022 students in the UK took the Applied Business Single Award at A2 (BBC 2009a), while 31,674 took the academic A-level in Business Studies at A2 (BBC 2009b).

The aim of the applied A-level is to provide a broad background in a specific vocational area and flexible progression routes into higher education, further training or employment (QCA 2004). Each set of specifications is embedded within a work-related context. In Applied Business, for example, the fundamental philosophy is that to understand the nature of applied business, students must actually experience the business environment (AQA 2007, 4). This can be achieved through work experience, contact with employers, either in a workplace or educational setting, researching businesses, using case studies and participating in business activities or simulations, such as the Young Enterprise Company Programme (AQA 2007, 4). The qualification is assessed through a mix of coursework and traditional, externally assessed examinations. Typically, the coursework accounts for about two-thirds of a student's assessment.

The applied A-level aims to provide students with not only knowledge and experience in a specific vocational area but also opportunities for general skills development. Students taking Applied Business are expected to develop a knowledge and understanding of the key business disciplines, such as marketing, finance, operations management and human resource management. They are also expected to acquire and develop a range of skills including research, problem solving, presentation (written and oral), ICT and a range of personal skills such as time management and creativity (AQA 2007, 13).

This study questions whether there is really a place for the applied track in UK further education, given that students who want to go to university usually take academic A-levels and those who want to learn skills or progress into employment can take Diploma programmes, National Vocational Qualifications (NVQs) or apprenticeships. The literature review focuses on two key aspects of the applied A-level that distinguish it from the academic version: its reliance on coursework as an assessment method and its vocational nature, which has increasingly led it to being labelled as 'soft', i.e., easier than academic A-levels.

Coursework

Coursework is work done by students for a qualification, undertaken at home or in an educational setting, but not under examination conditions and usually over a number of days or weeks. It counts towards a student's final grade for a qualification and may involve organising a project, conducting an investigation or practical experiments, writing an extended essay or report, or demonstrating performance. Coursework is a common method of assessment in upper-secondary education in many countries around the world. A study by O' Donnell et al. (2008) found that coursework is used

in upper-secondary education in Australia, Canada, France, the Netherlands and Norway, but it exists in a wide variety of forms in terms of what, when, how and where it is produced by students. The proportion of total marks accounted for by coursework also varies considerably across countries and qualifications.

In the UK, both the General Certificate of Secondary Education (GCSE), taken in year 11 by 16 year olds as the final qualification in compulsory secondary education, and the A-level, completed in year 13, have coursework in many different subjects. Coursework typically accounts for around 30 per cent of the total assessment in academic A-levels (Directgov 2009), although some subjects do not have any coursework, and it accounts for around two-thirds of the total assessment in applied A-levels. The Qualifications and Curriculum Authority (QCA 2006) claims that coursework is an excellent way for students to demonstrate the skills and knowledge they have gained throughout a course. It can allow students to broaden their knowledge and study a subject in more depth, enhance their research skills, give them more responsibility for what and how they study, aid their synthesis and conversion of theoretical knowledge into practical outcomes, develop their analytic and evaluative abilities, and develop a range of transferable skills including communication, interpersonal, time management and IT (QCA 2006). Whilst QCA claims that undertaking coursework can help students develop critical thinking, creativity and independent learning, a study by Martin et al. (2000, 4) concluded that coursework was not primarily seen as developing these attributes so much as using them.

Previous studies have concluded that most students find coursework motivating and preferable to unseen timed examinations, whether at GCSE level (Bishop et al. 1997; Bullock et al. 2002) or at undergraduate level (Woodfield, Earl-Novell, and Solomon 2005). Bishop et al. (1997, 304) found that the majority of GCSE students

believe coursework provides a challenge for students of all abilities and that it represents a fair measure of their level of achievement. However, Bullock et al. (2002, 325) found that while the process of completing coursework had the capacity to support deeper and more independent learning, the pressures of achieving good grades mediated against students reaching the optimum level of higher order thinking.

Bishop et al. (1997, 308) found that higher attainers, both male and female, favoured examinations over coursework, while lower attaining females were particularly keen on coursework. However, Martin et al. (2000, 5) found that many GCSE students, both male and female, expressed the view that they would not perform as well in their final examinations as they would in coursework. A study that analysed students' results in six subjects at four universities found that in Biology, Business Studies, Computer Studies and Law results for coursework were higher than for examinations by as much as two-thirds of one honours class/division (Bridges et al. 2002).

It has been suggested in various studies that coursework as an assessment method favours females and that males prefer, and perform better, in exams (Hackett 1991; Pirie 2001; Marks 2001; Woodfield, Earl-Novell, and Solomon 2005). A study by Cresswell (1990) that examined GCSE coursework marks achieved in English, Mathematics and Integrated Science found that the average coursework marks of females were higher than those of males in every case. However, several studies have concluded that coursework was just one of several factors that explained the better performance of females in GCSEs (Stobart, Elwood, and Quinlin 1992; Elwood 1995; Bishop et al. 1997). It should be noted that while females outperform males in coursework for GCSEs and A-levels, they also outperform them in examinations in the vast majority of subjects (Shepherd 2009a). A study of undergraduate students at

the University of Sussex found that females outperformed males in both coursework and examinations (Woodfield, Earl-Novell, and Solomon 2005). The study also discovered that females had more anxieties and concerns about all aspects of their academic performance, but that they demonstrated higher levels of commitment to their studies. Interestingly, the majority of students, both males and females, who expressed a preference for coursework over examinations, said that it was because they found it to be a better test of their abilities and effort, rather than because it was an easier mode of assessment.

There are courses available in UK upper-secondary education that do not require students to sit any formal timed examinations. BTEC (Business and Technology Education Council) qualifications are a range of vocational awards offered by the Edexcel awarding body. The BTEC National Diploma, which equates to three A-levels, is assessed only by coursework. However, many people are suspicious of the value and reliability of coursework, including university admissions tutors, employers, teachers, parents and politicians (Oliver 2009). It is widely believed that increased use of the Internet has increased the problem of plagiarism, that many teachers and parents offer students excessive levels of assistance and that they are given too many opportunities to improve or repeat work after receiving feedback or guidance from teachers (Martin et al. 2000; Oliver 2009). In order to tackle plagiarism and restore public confidence in school qualifications, the Conservative Party announced in January 2009 that it would abolish coursework in most GCSE and A-level subjects if it came to government after the next general election (Oliver 2009).

Vocationalisation of the school curriculum

Bell and Donnelly (2009, 25) note that there is a trend for governments around the world, to be seeking as a matter of policy, to increase the vocationalisation of the school curriculum. It is widely believed that vocational education can contribute to increasing a nation's skills levels, thus contributing directly to social and economic development, in addition to providing an alternative for those young people who cannot cope with or do not want an academic education. In Germany, Switzerland and Austria most students in upper-secondary education attend vocational programmes, but because vocational training is rapidly changing and expensive to deliver, governments are tending to favour educational rather than training approaches (Wallenborn and Heyneman 2009, 406). Wallenborn and Heyneman (2009, 410) observe that the content and definition of 'vocational' has shifted, in that rather than students acquiring practical skills and competencies which are needed for specific trades or industries, they are now often only learning about those skills and competencies or developing generic skills required across diverse vocations. It is now not uncommon to find students with a vocational education progressing to higher education (ibid.).

For several years, politicians in the UK have wanted to develop academic and vocational tracks in upper-secondary education that would be regarded as equal, with both tracks allowing progression to higher education. This ambition provides a rationale for the existence of the applied A-level. However, it seems to be commonly believed by teachers, parents, university admissions tutors and even the students themselves, that the vocational/applied tracks are second best and that they are for students who lack the ability (GCSE grades) to be accepted onto academic programmes (Vickers and Bekhradnia 2007; Wallenborn and Heyneman 2009). Such

beliefs have led to assumptions about which students should pursue vocational/applied courses and which should avoid them, and which students are suitable for progression to the selective, high ranking, research-intensive universities, and which are not. Whilst most students in upper-secondary education in Germany receive some vocational education, Bell and Donnelly (2009, 26) claim that students and parents generally prefer academic courses to vocational programmes when both are available.

There has been little research conducted on student attitudes to vocational/applied programmes and coursework assessment in post-compulsory secondary education or on the suitability of the applied A-level as a qualification for entry onto undergraduate degree programmes at universities. This study seeks to address that gap in the literature. Specifically, it seeks to discover why students chose to follow an applied A-level. Was it because they wanted to acquire and develop knowledge and skills relevant to a specific vocational field? Was it because they wanted to do a programme assessed largely through coursework? Was it because they wanted a more independent, self-managed approach to learning? Or, was it a forced choice? The study also considers whether the applied A-level is easier than the academic A-level and whether or not it offers students a suitable preparation for higher education. Although some issues of 'use value' are considered, for example, whether students are equipped with the knowledge and skills they need for higher education, the focus of the study is on the 'exchange value' of the applied A-level, i.e., the ability to use the qualification for entry onto undergraduate degree programmes. Academic A-levels have high 'exchange value', as they allow entry to higher education, but they have low 'use value', as they do not relate closely to real work tasks or work performance (Wilkins 2002, 426).

‘Soft’ subjects and higher education

There has been considerable discussion and debate in the media on the subject of ‘soft’ A-levels (BBC 2008; Clark 2008; Paton 2008). This was largely the result of the University of Cambridge and the London School of Economics (LSE) publishing lists of non-preferred academic and applied A-level subjects. Lists from both institutions include Business Studies. The University of Cambridge website states, ‘Applied A-levels are not an ideal preparation for most Cambridge courses, where the emphasis is more academic than vocational. However, if the essential and highly desirable subjects listed for each course are covered, a six-unit Applied A-level could be taken instead of a third A-level or as an additional fourth broadening subject.’ (University of Cambridge 2009). Fazackerley and Chant (2008, 8) claim that universities are most interested in a student’s skills and their ability to think and study independently, but Bassett et al. (2009, 5) suggested that A-levels in general do not encourage students to think, show flair or study independently.

Of those who believe that it is possible to distinguish between ‘hard’ and ‘soft’ A-level subjects, most would probably argue that all applied A-levels belong in the ‘soft’ category, due to their vocational focus and heavy reliance on coursework. There *is* consensus in the literature about which A-level subjects are easier or more difficult and Business Studies is always categorised as being easier (Fitz-Gibbon and Vincent 1994; Alton and Pearson 1996; Dearing 1996; Bachan and Barrow 2006). However, these studies did not distinguish between the applied Business and traditional, ‘academic’ Business Studies A-levels. A report by Coe et al. (2008) provides a summary of previous studies that have examined the relative difficulty of examinations in different subjects. The media coverage about ‘soft’ subjects has focused the attention of students, teachers, careers advisers and parents on the issue

and it is now more widely and openly accepted that taking 'soft' A-levels can disadvantage those students seeking to achieve a place at higher ranked UK universities (BBC 2008; Clark 2008; Paton 2008).

Although many universities clearly prefer applicants with academic rather than vocational qualifications, a study by Vickers and Bekhradnia (2007, 26) found that students who had taken vocational qualifications were over represented in higher education. However, Bailey and Bekhradnia (2008) discovered that students in higher education who had taken vocational qualifications were far more likely to drop out during their first year of study than students who had taken academic A-levels. In addition, they found that the students who had taken vocational qualifications achieved lower degree classifications (ibid.).

After many years of increased examination entries in A-level subjects such as Business Studies, Media Studies and Sociology, at the expense of subjects such as Mathematics, Science, Economics and Modern Foreign Languages, a turnaround occurred in 2009 (Shepherd 2009b). For example, between 1992 and 2004, the number of students taking Economics in England fell by 62 per cent while the number taking Business Studies over the same period increased by 70 per cent (Bachan and Barrow 2006). However, the number of students taking Economics at A-level in 2009 increased by 15.2 per cent from the previous year (DCSF 2010).

This study seeks to discover the motives of students for choosing to follow the Applied Business A-level, and specifically to assess the extent to which they were motivated by coursework assessment and perceived easiness compared to academic A-levels. Based on students' GCSE scores and A-level grades achieved in Business Studies (hereafter referred to as 'academic Business Studies'), Economics and Applied Business, statistical analysis was conducted to assess whether the applied A-

level is easier than the two academic A-levels. The applied A-level would be deemed easier than the two academic programmes if students with the same mean GCSE scores achieved higher grades on the applied course.

Research questions

The research questions that this study seeks to address are:

- Why do students choose to take applied A-levels?
- Are students who take applied A-levels satisfied with them?
- Are applied A-levels easier than the academic A-levels?
- Do applied A-levels adequately prepare students for higher education in terms of ‘use’ and ‘exchange value’?

Methods

The study is based on a questionnaire completed by 64 students taking the Applied Business programme in 2008-9, and on enrolment and examination results data covering a three-year period (2006-9) at a large, mixed sex sixth form college in East Anglia, England. A sixth form college is a post-compulsory institution in the UK that specialises in education for 16-19 year olds. The enrolment records and examination results of 666 students who had completed either the Applied A-level in Business (Single Award) or the academic A-levels in Business Studies and Economics were obtained. This figure represents the total of all the students who took these subjects at the College over the three-year period and, to provide a baseline measure, who had also previously taken GCSEs. Coursework accounted for two-thirds of the total assessment on the applied business course, but the academic A-level courses in business studies and economics had no coursework, with students’ grades determined

by their performance in unseen timed examinations. All students were aged 16-19 and studying on a full-time basis. They were studying A-level courses, mostly in three or four subjects. The vast majority of students took no more than one applied course.

To identify the reasons why students chose to take the applied A-level, a convenience sample of 64 students studying AS and A2 Applied Business in the 2008-9 academic year volunteered to complete a written questionnaire early in the second term. This represented a response rate of 46.4 per cent, based on the total number of students following the programmes. The questionnaire consisted of a number of questions that were intended to discover why students had chosen to study applied business rather than academic A-level in business studies, whether they thought the applied business course was easier or harder than their other A-levels, whether they were satisfied with the applied course, whether they were content with their decision to take it, and what they intended to do after they had completed their A-levels. In asking students to compare the easiness/difficulty of the applied course with their other A-levels it is recognised that direct comparisons between students are difficult due to the fact that each student took a different combination of subjects. As the College strongly advises all students not to take more than two subjects that may be considered 'soft' or 'vocational', including all applied A-levels, and most students follow this advice, this means that they must have been studying on at least one A-level programme that is considered 'hard'. However, it is accepted that this question really allows only a generalised comparison of students' perceptions of Applied Business A-level and other A-levels.

The questionnaire gave a list of reasons why students might have chosen to take Applied Business at A-level, and the survey participants were asked to give each a score of between 0 (was not a reason for them) to 10 (was a very important reason for

them). The questionnaire also had a space where students could write additional reasons they had for choosing to take Applied Business.

To assess whether the applied business course is easier than the academic A-levels in economics and business studies, statistical analysis comparing students' mean GCSE scores and the A-level grades achieved was carried out using the software package R (2009 version). Analysis of variance was employed to compare the three A-level subjects, and linear regression models were created to assess whether A-level performance could be predicted from GCSE scores and from A-level subject. In these analyses, A-level subject was entered using dummy coding. Specifically, the regression included two binary predictors, one of which coded whether (1) or not (0) a student took Business Studies and the other of which coded whether or not a student took Economics. A student with a score of zero in both these predictors therefore took Applied Business, and this provided the baseline case against which the other two subjects were compared.

In addition, to gain further background information relevant to the study, the minutes of the meetings of the course team for the Applied Business A-level, the results of the College's learner satisfaction survey in 2008 and the Self Assessment Review (SAR) of the Department of Economics and Business Studies 2007-8 were obtained and examined. Four teachers, who each taught on at least two of the three courses included in this study, participated in individual semi-structured interviews intended to discover their experiences of teaching on the different A-level programmes and their views and attitudes towards the Applied A-level in Business. Each interview lasted between 20-30 minutes. The interviewer wrote notes on each teacher's responses during the interviews. These notes were later compared, to assess the degree of consensus among the responses received.

Results

Table 1 shows that over the three years of the study, the applied Business course saw by far the largest percentage increase in number of student completions, doubling between 2007 and 2009.

Table 1. Number of students completing A levels in Applied Business, Business Studies and Economics

	2007	2008	2009	Totals
Applied Business	31	39	62	132
Business Studies	105	94	112	311
Economics	57	78	88	223

Students taking the applied Business course possess a mean GCSE score on entry that is very similar to the mean score achieved by students on the academic A-level in Business Studies, although it is marginally lower in each of the three years. Table 2 shows, however, that students taking A-level Economics possess a mean GCSE score on entry that is more than half a grade higher than either of the two business courses. The mean A-level grades achieved in each of the three subjects are in similar rank order to the mean GCSE scores on entry. It can be concluded that having lower GCSE grades is not the reason why students choose to take applied Business over the academic Business Studies course, but that higher attaining students are more likely to be attracted to Economics.

Table 3 shows the results of the questionnaire completed by students about why they chose to take the applied Business course. Preference for coursework assessment rather than formal examinations was by far the most popular response. It is possible that students' preference for coursework is based on both a preference for the process, in that completing coursework can be more motivating and satisfying over a longer

time period and less stressful than preparing for and taking examinations, and their expectation that their grades would be higher in a course with a higher proportion of coursework assessment. Statistical analysis was undertaken in this study to investigate whether this assumption of students (and, anecdotally, of teachers and parents also) is well founded.

Table 2. Comparison of mean GCSE scores on entry and mean A level grades achieved in Applied Business, Business Studies and Economics.

	2007	2008	2009	Totals
Applied Business				
Mean GCSE score on entry	5.66	5.58	5.75	5.66
Mean A level grade achieved	3.16	2.97	2.76	2.96
Business Studies				
Mean GCSE score on entry	5.74	5.60	5.82	5.72
Mean A level grade achieved	3.63	3.03	3.22	3.29
Economics				
Mean GCSE score on entry	6.33	6.19	6.40	6.31
Mean A level grade achieved	3.98	3.72	3.92	3.87

Note: Grades were converted into numerical scores using the following methods:

Mean GCSE score on entry: A* = 8, A = 7, B = 6, C = 5, D = 4, E = 3, F = 2, G = 1

Mean A level grade: A = 5, B = 4, C = 3, D = 2, E = 1

It was clear that students were also attracted to the style of learning undertaken on the applied course: teachers adopt a student-centred approach to delivery in the classroom that makes students more independent and responsible for their own learning; students make much greater use of ICT for research and presentation of work, both in and out of the classroom; and course theory is applied to the real business world throughout the programme, using visits to businesses, guest speakers from industry and case study investigations. The high use of ICT in applied business lessons distinguishes it from all other business and economics courses in which typically the use of computers has halved over the last decade (Hurd 2009, 139).

Table 3. Reasons why students said they chose to take Applied Business at A level.

Reason	Mean score per student
1. I wanted to take a course that had more coursework assessment rather than exams	9.14
2. I wanted to take a course where I would be more responsible for my own learning and not have so much teacher-led delivery	6.94
3. I wanted to take a course that would involve more visits and practical interaction with businesses	6.44
4. I wanted a business course that would make more use of ICT, both in and out of the classroom	5.89
5. It was the course recommended to me by a teacher(s)/career adviser(s)	3.53
6. It was the course my friends were doing	2.31
7. It was the course recommended to me by my parents/relatives	1.67
8. I wanted to study a more practical version of business, as I may want to start my own business	0.81
9. I took Applied Business at school and enjoyed it/found it interesting	0.75 (7.28) ^a
10. I took Applied Business at school and was good at it/got a good GCSE grade	0.70 (6.79) ^a

Note: ^a This mean score per student figure has been adjusted according to the proportion of the student cohort that had actually taken Applied Business at GCSE level (9.7% in 2008-9).

Those who had completed Applied Business at GCSE level at school seemed to use that as a positive frame of reference, and chose to undertake the applied A-level because they had enjoyed the GCSE course and/or performed well on it. Most students reported that the course being recommended by teachers, careers advisers or their parents was not a significant factor influencing their choice to take the applied A-level. The specifications for the Applied Business A-level are designed so that students will develop skills required for success as an entrepreneur (AQA 2007, 13). The content and assessment tasks of the programme might encourage young people to set up their own businesses. For example, the Edexcel specification requires students

to research and identify a potential business opportunity to provide a service in their local area and to then create a business plan to take the idea forward (Edexcel 2009, 19). However, only 4.7 per cent of the respondents (3 students from the 64 sample) gave a score of 8 or more out of 10 for wanting a practical version of business because they were interested in starting their own business. In contrast, 71.9 per cent said that they wanted to progress to university to take an undergraduate degree, and a further 4.7 per cent said they wanted to go to university to take a diploma or non-degree course. The 76.6 per cent of applied students who said they wanted to go to university was only a marginally lower proportion than the College average of year 13 leavers who went to university (78 per cent in 2008-9). 12 per cent of the applied students said that they wanted to enter the labour market after completing their A-levels.

Levels of student satisfaction were very high on the Applied Business course. 97 per cent said that they found the course enjoyable and interesting and the same proportion agreed that they were content with their decision to take the course. The College's learner satisfaction survey in 2008, which achieved a near 100 per cent response rate (80 students at AS level and 39 at A2 level), found that 100 per cent of the AS level (first year) applied business students considered the course interesting and enjoyable and would recommend it to others, while the figure for the A2 level (second year) applied business students was 90 per cent. This lower figure for the A2 students was attributed by the course team largely to the final course assessment (Edexcel specifications, unit 8), a report written over 15 hours in the classroom under examination conditions, which many students found difficult and in which most students achieved a grade lower than their course average, subsequently resulting in

several students achieving an overall course grade one lower than they had been expecting.

The belief that students find coursework motivating and that it improves their commitment to study seems to be confirmed by the findings of this survey. 73.4 per cent of the students reported that the workload was heavier and that they spent more time working on the applied course than their other A-levels, while only 6.3 per cent reported that the workload was heavier on their other A-levels. There was no clear evidence to suggest that students found coursework on the applied course any less difficult than the work on their other A-levels. 53.1 per cent of students judged that the applied course was of similar difficulty than their other A-levels, 26.6 per cent thought that it was easier, but 20.3 per cent thought that it was harder. It is possible that while some students found the process of completing coursework harder than studying for examinations, they may still have expected to achieve a higher grade completing coursework than sitting examinations. From these results it does not seem that students consider the applied course to be a 'soft' option.

Statistical analysis was performed to discover whether there was any evidence of students performing differently on the applied business and academic business studies courses, and to compare the performance of students on both business courses with those taking economics. The grade data, which provided the dependent variable for these analyses, came from a relatively restricted range and so were unlikely to be suitable for parametric analysis in their raw form. To help address this issue the scores were ranked using a method whereby tied ranks were averaged, and the ranked data were used for all the analyses reported below, thus providing non-parametric analysis. The mean ranks for the three subjects were as follows: applied Business, mean rank = 256.93 (sd = 175.21); academic Business Studies, mean rank = 315.54 (sd = 187.62);

Economics, mean rank = 403.88 (sd = 168.37). Examination of the raw data revealed that applied Business and academic Business Studies students performed similarly except that applied Business students were more likely to achieve a D grade (30 per cent of the sample obtained this grade, compared to 20 per cent of the academic Business Studies students) whereas academic Business Studies students were more likely to achieve an A grade (19 per cent of the sample obtained the top grade compared to 9 per cent of the applied Business students).

Overall, then, it appears that academic Business Studies students performed better than applied Business students, and that Economics students performed substantially better than the other two groups. Planned Welch *t*-tests, using Bonferroni correction for multiple comparisons, confirmed that applied Business students had lower performance than academic Business Studies students (95 per cent CI = -95.22 to -21.99, $t[263.19] = -3.15$, $p = .005$), and both applied Business (95 per cent CI = -184.29 to -109.60, $t[266.39] = -7.75$, $p < .0001$) and academic Business Studies students (95 per cent CI = -118.80 to -57.89, $t[506.03] = -5.70$, $p < .0001$) performed worse than Economics students.

It was then considered whether students' mean GCSE scores (which may provide a measure of pre-A-level academic ability) might predict performance on these A-levels. The mean GCSE performance levels for the three categories of student were as follows: applied Business, mean = 5.66 (sd = 0.67); academic Business Studies, mean = 5.72 (sd = 0.70); and Economics, mean = 6.31 (sd = 0.62), revealing that those taking Economics might tend to start their A-levels as slightly better students. Analysis of variance confirmed that the three groups of students differed in their GCSE performance ($F[2,663] = 58.55$, $MSE = 0.45$, $p < .0001$), and Bonferroni-corrected Welch *t*-tests confirmed that applied Business students did not differ from

academic Business Studies students in their GCSE performance (95 per cent CI = -0.19 to 0.09, $t[259.22] = -0.69$, $p = 1$) whereas both applied Business students (95 per cent CI = -0.76 to -0.49, $t[258.57] = -8.79$, $p < .0001$) and academic Business Studies students (95 per cent CI = -0.69 to -0.47, $t[510.34] = -10.06$, $p < .0001$) had lower GCSE grades than the Economics students.

Having seen that economics students performed better in their GCSEs than students taking the other two subjects, it was then explored whether this difference in GCSE scores might account for differences in A-level performance. Regression models were constructed to predict ranked A-level performance from dummy variables encoding A-level subject and from GCSE performance. This showed that a model which included GCSE scores better accounted for differences in A-level performance (adjusted $R^2 = .37$) compared to a model that predicted A-level performance from subject alone (adjusted $R^2 = .08$; comparison of the two models revealed they were significantly different with $F [1,662] = 297.49$, $MSE = 21227104$, $p < .0001$). As such, knowing a person's GCSE performance helps us understand their performance on these A-levels. But, even after accounting for differences in students' GCSEs, taking academic Business Studies rather than applied Business was associated with better A-level performance ($t = 3.33$, $p = .001$), as was taking Economics rather than applied Business ($t = 3.11$, $p = .002$).

This last analysis confirms that, even after taking GCSEs into account, applied Business students perform less well than students taking the other two subjects. However, it also showed that adding GCSE data to the analysis removes the difference between the academic Business Studies and Economics students. Without GCSEs in the model, taking Economics was associated with better A-level performance than taking academic Business Studies: Economics students were 146.94

ranks higher, on average, than applied Business students whilst academic Business Studies students were, on average, only 58.60 ranks higher. However, when GCSE data were added to the model, the advantage for Economics students disappeared: they were on average 53.54 ranks higher than the applied Business students and the academic Business Studies students were on average 51.39 ranks higher. This shows that academic Business Studies and Economics students perform the same at A-level once the Economics students' better GCSE scores are taken into account.

Finally, a 2×2 analysis of variance was carried out to predict A-level performance from 'sex' and 'subject' for the students taking applied Business and academic Business Studies. This showed that whereas there was a main effect of 'subject' on A-level performance, confirming the earlier finding that academic Business Studies students outperformed applied Business students ($F[1,439] = 9.37$, $MSE = 33978$, $p = .002$), there was no effect of 'sex' on A-level performance ($F[1,439] = 0.001$, $MSE = 33978$, $p = .98$) and no Subject \times Sex interaction ($F[1,439] = 0.50$, $MSE = 33978$, $p = .48$).

In summary, then, contrary to the common belief of students, teachers, parents and university admissions tutors that students achieve higher grades on applied A-level courses, the applied Business students actually performed worse in their A-levels than academic Business Studies or Economics students. The Economics students also outperformed the Business Studies students, but this effect could be explained in terms of their better GCSE scores, whereas the applied Business students' lower performance could not be explained in this way. There was no sign of sex playing a role in A-level performance when the applied Business and academic Business Studies students were compared, and so there is no evidence to suggest that females doing coursework on the applied course were favoured or that they did any worse than

males when assessed only by unseen timed examinations on the academic Business Studies course. These findings confirm those of Gorard, Rees and Salisbury (2001), who analysed the results of all students in Wales over a six-year period and concluded that sex did not play a significant role in A-level achievement.

The interviews with the four teachers revealed that they were overwhelmingly positive about the applied A-level qualification. They felt that there was a distinct place for the qualification in the curriculum for students who preferred completing coursework rather than taking examinations. However, they recognised that in order to be successful on the applied Business course students need to be willing to work hard and have the ability to work independently. They also need to be creative and have good written English and ICT skills. The teachers did not accept that the applied Business course was any easier than the academic Business Studies course, and they were opposed to the use of the term 'soft' to describe any A-level course. The interviews did not yield specific data for analysis but they were useful in providing background information on the institutional context where the study was conducted. For example, it was clear that the teachers were supportive of the applied programme, and this might have had an impact on student performance and the perceptions of students about the programme.

Discussion

The findings of this study challenge many of the commonly held beliefs of teachers, careers advisers, parents, politicians and university admissions tutors about vocational/applied qualifications and qualifications with a high proportion of coursework assessment. Given these findings, it may be reasonable to term these commonly held beliefs 'fallacies'.

Fallacy 1: Vocational qualifications are a forced choice for students with lower attainment who do not meet the requirements to take academic qualifications.

The vast majority of students taking the applied Business course in this study positively decided to do so. They all possessed the mean GCSE scores required to undertake the academic A-levels in Business Studies or Economics, or indeed any other A-level offered in the college, conditional on satisfying the requirements of individual subjects in terms of prior study. Clearly, taking the applied A-level was not a forced choice. This is not to say that some schools or colleges do not steer or force students with lower GCSE attainment onto applied A-levels, assuming that their chances of success, or even survival, will be higher on such courses. However, the teachers in these schools and colleges should consider the findings discussed below regarding fallacy three.

Fallacy 2: Vocational qualifications are often taken by students who are less motivated and committed to study, and who are often disillusioned with education.

The teachers interviewed agreed unanimously that the students taking the applied Business course were generally well motivated, committed to their study and hard-working. The course had a very low dropout rate and student achievement was considerably above the national average for the qualification. The fact that 97 per cent of the sampled students said that they enjoyed the applied course, that they found it interesting and that they were content with their decision to take it, and the fact that 76.6 per cent said they intended to progress onto some form of higher education indicates that they were committed to study and not disillusioned with education.

Fallacy 3: Vocational qualifications are easier than academic qualifications and students who take vocational qualifications achieve higher grades than they would had they taken academic qualifications. It is, therefore, reasonable to label applied A-levels as 'soft'.

It was clear that students taking the applied course believed that its greater dependency on coursework to determine their final grades was a favourable feature and that it would enable them to achieve a higher overall grade. This appeared to be one of their key reasons for choosing to take the course. However, this study found that the applied students achieved, on average, lower grades than students on the academic A-level courses in both Business Studies and Economics, even when controlling for the effects of the economics students having considerably higher mean GCSE scores. This suggests that students who take courses with more coursework assessment can not necessarily expect to achieve higher grades, and that it is wrong to assume that such courses are easier than courses assessed only or mainly by formal examinations.

There is no evidence to suggest that students who took applied Business performed better than they would have had they taken academic Business Studies, given that the students taking each course had very similar mean GCSE scores in each of the three years. The course team were aware that students with the same GCSE scores did not achieve higher grades on the applied course compared to the academic Business Studies course, but they admitted that senior (pastoral) tutors occasionally advised (and forced) students with lower attainment to take the applied course in the belief that it may be easier. None of the teachers interviewed believed that it was fair or accurate to label the Applied A-level in Business as a 'soft' subject. There was also

no evidence to suggest that coursework favoured females on the applied course or that formal examinations favoured males on the academic courses.

‘Soft subjects’ is a term that has been widely used in the media to describe certain A-level subjects. While the meta-analysis conducted by Coe et al. (2008), which assessed the relative difficulty of examinations in different subjects, concluded that some subjects, such as Mathematics and the Sciences, could legitimately be described as ‘harder’ and other subjects such as Media Studies, Sociology and Business Studies, could legitimately be described as ‘easier’, it would be wrong to assume that all vocational or coursework-based courses were less difficult. Information Technology, for example, is one of the subjects classified as ‘harder’ (ibid.). Compared to the ‘hard’ subjects, applied Business may indeed be easier, but it is not easier than the academic Business Studies course.

It should perhaps be noted that it could be problematic referring to the applied Business course as ‘vocational’ because most people also consider the academic Business Studies course to be vocational. For this reason, it could also be problematic referring to the traditional exam-based Business Studies A-level as ‘academic’. It may be concluded, then, that it is reasonable to classify Business Studies as a ‘soft subject’, in both academic and applied forms, as the average student would achieve a higher grade in either of these than they would in Mathematics or a Science subject, but this is *not* because Business Studies is a vocational subject or because the applied course relies heavily on coursework assessment (Coe et al. 2008). Other vocational subjects, such as Information Technology, are harder and other non-vocational subjects, such as English, are easier. Interestingly, at GCSE level, Coe et al. (2008) classify Business Studies as a harder subject.

Fallacy 4: Applied A-levels do not adequately prepare students for progression onto higher education.

Only the University of Cambridge and the LSE have published lists of non-preferred A-level subjects. It is worth emphasising two points: first, these universities are not objecting to these subjects because they are easier, but because they are deemed to offer a less suitable preparation for study at those two institutions, and second, they are not rejecting the non-preferred subjects outright; rather it is the combination of subjects that a student takes that they are more concerned with. To put it more bluntly, these universities might be prepared to consider students who have taken one non-preferred subject, but almost definitely not if they have taken two. This position was further clarified by a statement published by the Russell Group (2008), the organisation that represents 20 of the UK's leading research-intensive universities, which emphasised that none of its members 'bars' any particular A-level subject. The statement also advised students to take care in choosing their combinations of A-level subjects so as not to disadvantage themselves. As mentioned earlier, the University of Cambridge has published a very clear statement that applied A-levels are not an ideal preparation for its undergraduate courses.

Fazackerley and Chant (2008, 8) explain that what universities are most interested in are the skills that a student will need to cope with, and excel in, a particular course. The factors that are considered by university admissions tutors includes whether a subject encourages independent thought, whether its content is academic or practical, the amount of group work involved and the level of internal and external examinations, which may be interpreted as the proportion of coursework to formal unseen timed examinations (ibid.). Bassett et al. (2009, 5) argue that A-levels in general do not encourage students to think or show flair and that students struggle to

study independently even when they are at university. In some subjects it is difficult for students to demonstrate critical and original thinking skills and to use problem-solving skills.

Many of the criticisms of A-levels, and of the soft subjects in particular, do not seem to be justified with respect to the applied A-level in Business. In undertaking complex pieces of coursework students are forced to work independently setting their own objectives and managing their own time. Curiosity-led learning is typical, with students relying on text books, Internet research, journals, visits to businesses and interviews with business people for information, which they then have to synthesise effectively to provide solutions for the problem they are working on. In addition to needing initiative and commitment, students develop problem-solving, communication and ICT skills whilst working on coursework. The strongest pieces of work are those that show originality, creativity and a thorough appreciation of the subject matter. Theory learnt in the classroom must be accurately and correctly applied to the practical case specified. The nature of the assignments set makes it very difficult for students to plagiarise from the Internet or other written sources.

For example, one of the teachers interviewed explained that for a marketing assignment students had to create a marketing plan targeting a specific market segment for a particular theme park located just outside London. In addition to understanding the theory of marketing plans, segmentation etc., students had to research relevant aspects of the theme park industry and the characteristics of the theme park's customers, or potential customers, relating this to the park's specific geographical location. In considering potential demand, students had to consider the state of the local labour market and the current state of the economy. Interest rates, inflation, exchange rates and levels of unemployment are constantly changing and

will impact on different businesses in different ways and to different extents, again making plagiarism difficult. Students needed to be creative to develop an original 'product' and then needed considerable skill to synthesise their theoretical knowledge with their research findings.

The assessment criteria set by the awarding bodies are such that around half of the marks available are awarded for analytical ability, reasoned arguments, justified judgements and critical evaluation. It would seem, therefore, that the skills developed and demonstrated by students to complete such pieces of coursework to a high standard are exactly the types of skills that universities say they want. In fact, one of the teachers interviewed said, 'Generally, our students work very hard on their coursework and the standard of their output is very high. Each year, our best students present individual pieces of coursework that could easily pass as undergraduate dissertations.' The coursework is assessed internally, but the awarding bodies externally moderate a high proportion of it, so schools and colleges are not able to be consistently lenient in their marking. The most likely cause of students receiving coursework grades that are not representative of their true abilities is when students have received unfair assistance from teachers, parents, other students or other sources, such as the Internet.

Conclusion

It is possible that the applied A-level is a vocational qualification that is broadly fit for purpose, and which achieves most of its aims to some extent. In 2009, some 11,874 students in England took either the single or double award in Applied Business at A-level, indicating that it is a popular qualification (BBC 2009a). This study found that assessment by coursework was the most important reason for students choosing to

follow the applied Business course. The students in this study were overwhelmingly positive about the course and content with their decision to take it. Whilst the students may have perceived that coursework was easier than unseen examinations, it was found that students with the same mean GCSE scores achieved lower grades on the applied course than the academic courses. However, this was a relatively small-scale study, intended as a preliminary investigation, and so its findings are not generalisable across all A-levels (different types and different subjects) and across all educational contexts. Further research is clearly required to verify the findings and conclusions of this study. The findings do suggest, however, that it would be wrong for universities to blindly reject all applicants who have taken an applied A-level.

It is, perhaps, the speed at which qualifications in the applied/vocational track of general upper-secondary education have come and gone since the introduction of the General National Vocational Qualification (GNVQ) in 1991 that has made it difficult for parents and university admissions tutors to keep up to date, and it is the resulting lack of familiarity and understanding of applied/vocational qualifications amongst university admissions tutors that may contribute to their lower acceptance as an entry qualification to higher education. Whether or not the applied A-level survives beyond 2013 probably depends to a great extent on how well the new Advanced Diplomas are received. Whilst it might be difficult to justify the claim that UK further education *needs* an applied track, the applied A-level seems to satisfy a group of students who do not want a purely academic or purely vocational, skills-based programme.

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